

ABSTRACT OF THE DISCLOSURE

The present invention is a distillation system with individual fractionator tray temperature control, with the use of either a heating element or a cooling element, and in some preferred embodiments, the use of both a heating element and a cooling element in a plurality of fractionator trays. There is at least, and typically more than one distillation column having a plurality of fractionation trays, and having feed input, liquid removal, and vapor removal with the plurality of trays including at least one of a heating element and a cooling element. Controls are included for separate control of each of the heating element(s) and/or said cooling element(s). These controls may be regulated by a programmable microprocessor, and feedback from temperature sensors may be employed to provide discrete tray-by-tray temperature controls.